इंटरनेट मानक

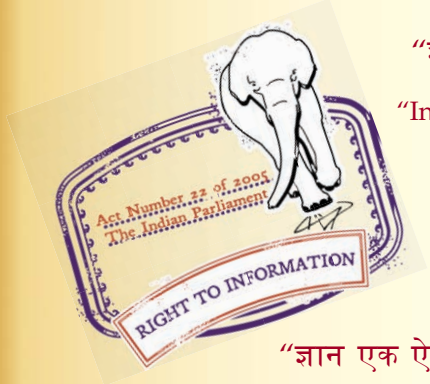
Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

"जानने का अधिकार, जीने का अधिकार"
Mazdoor Kisan Shakti Sangathan
"The Right to Information, The Right to Live"

"पुराने को छोड नये के तरफ"
Jawaharlal Nehru
"Step Out From the Old to the New"

IS 5140 (1969): Auriscope [MHD 4: Ear, Nose and Throat Surgery Instruments]



"ज्ञान से एक नये भारत का निर्माण"
Satyanarayan Gangaram Pitroda
"Invent a New India Using Knowledge"

"ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है"
Bhartṛhari—Nītiśatakam
"Knowledge is such a treasure which cannot be stolen"

BLANK PAGE

IS : 5140 - 1969
(Reaffirmed 1998)

Indian Standard

SPECIFICATION FOR AURISCOPE

UDC 615·471 : 616·28-072-71

INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 1

Price Rs 2·50 Gr. 2

August 1969

Indian Standard

SPECIFICATION FOR AURISCOPE

Optical and Mathematical Instruments Sectional Committee, EDC 36

Chairman	*Representing*
DR C. S. RAO	The Andhra Scientific Co Ltd, Masulipatam
Members	
SHRI P. V. SUBBA RAO (*Alternate* to Dr C. S. Rao)	
SHRI P. L. BHARDWAJ	Quality Marked Goods Manufacturers' Co-operative Association Ltd. Roorkee
SHRI JAI PRAKASH (*Alternate*)	
SHRI R. R. CHAKRABORTY	The National Instruments Limited, Jadavpur
SHRI J. SANYAL (*Alternate*)	
CHIEF HYDROCRAPHER (NAVY)	Indian Navy
DEPUTY DIRECTOR, STANDARDS (TRACK)	Research, Designs & Standards Organisation, Ministry of Railways
ASSISTANT DIRECTOR, STANDARDS (TRACK) (*Alternate*)	
DIRECTOR, INSTRUMENTS RESEARCH & DEVELOPMENT ESTABLISHMENT	Ministry of Defence (R & D)
SHRI S. S. DHARMAYYA (*Alternate*)	
MAJ S. GANGULI	Ministry of Defence (DGI)
MAJ P. S. BRAHMACHAREE (*Alternate*)	
SHRI A. GHOSH	National Test House, Calcutta
SHRI D. D. KHOSLA	Directorate of Industries, Government of Haryana, Chandigarh
COL K. L. KHOSLA	Survey of India, Dehra Dun
SHRI V. KRISHNAMOORTHY	Directorate General of Technical Development, New Delhi
SHRI D. MAJUMDAR	Office of the Development Commissioner, Small Scale Industries, Ministry of Industrial Development, Internal Trade and Company Affairs
SHRI G. B. JAKHETIA (Alternate)	
SHRI B. R. MANKHAND	The Koh-i-Noor (India) Private Limited, Varanasi
DR J. PRASAD	Central Scientific Instruments Organisation (CSIR), Chandigarh
SHRI RAM SINGH (*Alternate*)	
SHRI PREM PRAKASH	National Physical Laboratory (CSIR), New Delhi
SHRI P. C. JAIN (*Alternate*)	
SHRI E. B. RAJDERKAR	Raj-Der-Kar & Co, Bombay
SHRI SUBHASH RAJDERKAR (*Alternate*)	

(*Continued on page 2*)

INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELI-II 1

(*Continued from page* 1)

Members	*Representing*
DR I. RAMAKRISHNA RAO	In personal capacity (*16-3-5 Official Colony, Visakhapatnam 2*)
REPRESENTATIVE	Madras Institute of Technology, Madras
SURVEYOR OF WORKS II UNDER SUPERINTENDING SURVEYOR OF WORKS I	Central Public Works Department
SHRI H. C. VERMA	Associated Instrument Manufacturers (India) Private Limited, New Delhi
SHRI J. A. UNVALA (Alternate)	
SHRI M. V. PATANKAR, Director (Mech Engg)	Director General, IS1 (*Ex-officio Member*)

Secretary

SHRI S. M. RAZVI

Deputy Director (Mech Engg), IS1

Medical Optical Instruments Subcommittee, EDC 36 : 6

Convener	
SHRI S. S. DHARMAYYA	Ministry of Defence (R & D)
Members	
SHRI T. R. GANGADHARAN (*Alternate* to Shri S. S. Dharmayya)	
DR LALIT P. AGARWAL	All India Institute of Medical Sciences, New Delhi
ASSISTANT DIRECTOR GENERAL (DEVELOPMENT)	Directorate General of Armed Forces Medical Services, Ministry of Defence
SHRI V. KRISHNAMOORTHY	Directorate General cf Technical Development, New Delhi
SHRI H. C. MUKHERJEE	Ministry of Defence (DGI)
DR J. PRASAD	Central Scientific Instruments Organisation (CSIR), Chandigarh
SHRI RAM SINGH (*Alternate*)	
SHRI C. NARAYANA RAO	The Andhra Scientific Co Ltd, Masulipatam
SHRI J. SANYAL	The National Instruments Limited, Jadavpur
DR R. G. SINGH	National Physical Laboratory (CSIR), New Delhi

Indian Standard

SPECIFICATION FOR AURISCOPE

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 12 May 1969, after the draft finalized by the Optical and Mathematical Instruments Sectional Committee had been approved by the Mechanical Engineering Division Council.

0.2 Auriscope is a diagnostic medical instrument used for the visual examination of the tympanic membrane and external auditory canal of the human ear.

0.3 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS :2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard covers the general functional requirements of auriscope.

2. TERMINOLOGY

2.1 Otoscope Head — Otoscope head consists of a speculum, a lamp holder, a lamp, a large magnifier, a small magnifier, a contact pin for electrical connection and a connecting nozzle for the insuffulator.

2.2 Speculum — It is that part of the otoscope head which is inserted in the ear.

2.3 Rheostat Assembly — The unit for the gradual variation of the light intensity.

2.4 Insuffulator — A rubber bellows attached to the otoscope head to pump air.

2.5 Large Magnifier — A magnifier for general examination.

2.6 Small Magnifier — An auxiliary magnifier for conducting minor operations.

*Rules for rounding off numerical values (*revised*).

3. GENERAL REQUIREMENTS

3.1 Each part of the auriscope shall be made from materials of suitable strength and shall be suitably finished.

3.1.1 Coating and plating on each part shall be durable to resist discolouration, wear and corrosion.

3.1.2 All brass components shall be nickel chromium plated and aluminium parts anodised and dyed black. Nickel chromium plating shall conform to IS :1068-1968* and anodising to IS :1868-1968†.

3.1.3 The speculum shall be finished dull black inside.

3.2 The dimensions of the threaded and mating portions shall be such as to ensure interchangeability of spare parts.

3.3 The optical parts shall be clear of fog and moulds and shall conform to IS :988-1959‡.

3.4 All the sharp edges shall be removed.

3.5 The case for the instrument shall be made of any suitable material. It shall be so designed that when the instrument and accessories are kept in position and the lid closed, there shall be no rattling inside the case.

4. FUNCTIONAL REQUIREMENTS

4.0 The essential parts of the instrument shall meet the following requirements.

4.1 Cell Container — This shall be a rigid cylindrical container to take two 1·5 volts IR-20 torch cells conforming to IS :203-1963§ and a rheostat assembly.

4.1.1 When the top and bottom caps are tightened with the cells in position, the cells shall have no play inside the container.

4.1.2 A spring of suitable strength shall also be provided in the bottom cap for keeping the cells in position and to ensure good electrical contact.

4.2 Rheostat Assembly

4.2.1 The total resistance of the rheostat shall be such as to give a variation of the light intensity from zero to maximum along the total travel of the wiper.

---

*Specification for electroplated coatings of nickel and chromium on iron and steel (*first revision*).

†Specification for anodic coatings on aluminium (first *revision*).

‡General requirements for optical components.

#Specification for dry batteries for flashlights (*second* revision).

4.2.2 'ON' and 'OFF' shall be marked on the container at the extremities of the wiper movement.

4.2.3 The movement of the wiper shall be uniformly smooth and shall neither be too tight nor too loose.

4.3 Otoscope Head

4.3.1 Three specula of different diameters as shown in Appendix A shall be provided with the otoscope head. The speculum shall have a close running fit in the otoscope head and shall be detachable with the minimum of force.

4.3.2 The dimensions of the otoscope head and the large lens holder shall be as indicated in the figures in Appendix A.

4.3.3 The large magnifier shall be a close running fit on the otoscope head and shall have a flange diameter as indicated in the figure in Appendix A. A small magnifier shall be fitted on the side of the otoscope head in such a way that it may be swung in position when required. The fitting of the small magnifier shall be such as to keep the magnifier in any desired position.

4.3.4 The large magnifier shall have magnification 3× (approx) and working distance 83 mm.

4.3.5 The small magnifier shall have magnification slightly less than 3 × and working distance 87·0 mm.

4.3.6 The fitting of the large magnifier mount and the speculum on the otoscope head shall be such as to provide sufficient air tightness and shall have dimensions as indicated in the figure in Appendix A.

4.3.7 The location of the lamp holder shall be such that when the lamp is fully screwed on to it, the opening of the speculum is fully illuminated and the vision through the opening of speculum shall not be obstructed by the lamp.

4.3.8 The contact pin of the otoscope head shall be snug fitted in the top cap of the cell container.

4.3.9 The lamp shall be rated at 2·5 volts and 0·3 ampere and its light output shall not be less than 1·3 lumens per watt.

4.3.9.1 It shall have a lens at the tip of the glass shell so that the emergent light is a parallel or slightly divergent beam.

4.3.9.2 Illumination at the tip of the system shall be uniform and bright (not yellow).

4.4 The insuffulator shall be made of rubber or any other material of suitable strength. The material used shall be able to withstand severe climatic conditions.

5. SPARES

5.1 Three spare lamps shall be provided with each instrument.

6. TESTS

6.1 The auriscope shall initially be examined for the following external defects:

a) Loose, missing or damaged screws;

b) Scratched, broken or dirty optical surfaces;

c) Damage to the cell container, otoscope head, etc; and

d) Damage to external finish.

6.2 Wiper movement shall be tested as follows:

The wiper shall be operated fifty times to and fro and the wiper shall not get loosened, This test shall be carried out once with the cells in position and again without cells.

6.3 Air tightness shall be tested as follows:

After fixing the large magnifier and one of the specula on the otoscope head, the tip of the speculum shall be closed with finger tip and air pumped in with the insuffulator. The joints between the otoscope head, large magnifier and speculum shall be reasonably airtight.

6.4 The small magnifier, the large magnifier or the speculum shall not get displaced when subjected to slight jerks.

6.5 The insuffulator shall be subjected to pumping action 50 times. It shall not show any surface crack or other deterioration.

6.6 Life of the Lamp — The lamp, when tested at the rated voltage, shall have a useful life of not less than 15 hours, and its light output at the end of the test period shall not be less than 75 percent of the value specified in 4.3.9.

6.7 Light 'Output-The light output of the lamp shall be measured by a suitable photometer. The measured value shall conform to the specified value.

7. MARKING

7.1 Each auriscope shall be marked with the name, initials or trade-mark of the manufacturer.

7.1.1 Auriscope may also be marked with the ISI Certification Mark.

NOTE -The use of the IS1 Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act, and the Rules and Regulations made thereunder. Presence of this mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard, under a well-defined system of inspection, testing and quality control during production. This system, which is devised and supervised by IS1 and operated by the producer, has the further safeguard that the products as actually marketed are continuously checked by ISI for conformity to the standard. Details ofconditions, under which a licence for the use of the IS1 Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

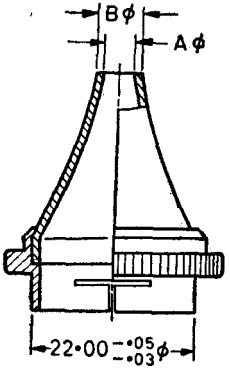
8. PACKING

8.1 The instrument with its spares shall be packed in its case.

APPENDIX A

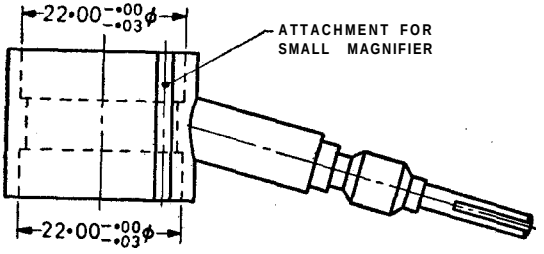
(*Clauses* 4.3.1, 4.3.2, 4.3.3 *and 4.3.6)*

DIMENSIONS FOR SPECULUM, LARGE LENS HOLDER AND OTOSCOPE HEAD

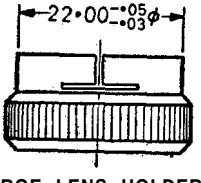


SIZE NO.	A MIN	B MAX
1	3·2	4·5
2	4·7	6·0
3	5·5	6·8

SPECULUM



OTOSCOPE HEAD OF AURISCOPE



LARGE LENS HOLDER

INDIAN STANDARDS

ON

Optical instruments

IS:		Rs
988-1959	General requirements for optical components	3·00
1399.1959	Glossary of terms used in optical technology	5·50
1400-1960	Optical glass	2·50
1955-1961	Prismatic compass, liquid	2·00
1957.1961	Prismatic compass, non-liquid	1·00
2352-1963	Procedure for basic climatic and durability tests for optical instruments	5·50
2754-1964	General requirements for optical instruments	5·00
2976-1964	Optical theodolite	3·50
2988-1965	Vernier theodolite	3.50
3081-1965	Dimensions and marking of general purposes microscopes ...	1·50
3099-1965	Slides and cover slips for microscopes	3.00
3113-1965	Prismatic binoculars for common use	3·00
3135-1965	Cathetometer	2·00
3686-1966	Student-type microscope	1·50
4328-1967	Monocular dissecting microscope	2·00
4329-1967	Measuring (travelling) microscope	2.50
4380-1967	Abney level	2.00
4381-1967	Pathological microscope	3·50
4382-1967	Non-tinted ophthalmic glass	3.50
5146-1969	Sounding sextant	2.50
5147-1969	Examination lamp with bull's eye condenser (floor model) (*under* print)	—

PUBLICATIONS OF INDIAN STANDARDS INSTITUTION

INDIAN STANDARDS

Over 5 000 Indian Standards, broadly classified under the following main heads, have been issued so far:

Agriculture & Food
Chemical
Civil Engineering
Consumer Products
Electrotechnical
Mechanical Engineering
Structural & Metals
Textile

Of these, the standards belonging to the Mechanical Engineering Group fall under the following categories:

Basic Engineering Standards
Abrasives
Bearings
Bicycle Components
Chemical Engineering
Engineering Metrology
Gas Cylinders and Fittings
Gaskets and Packings
Gears
Hand Tools
IC Engines and Automotive Vehicles
Instruments (Drawing, Optical and Surveying)
Machine Tools and Small Tools
Marine Engineering and Ship-building
Material Handling, Lifting Gear Mining
Pumps
Refrigeration and Air-Conditioning
Sewing Machines
Steam Tables
Threaded Fasteners and Rivets
Transmission Devices, Pulleys and Belts
Weights and Measures
Wire Ropes and Wire Products
Unclassified

OTHER PUBLICATIONS

	Rs
ISI Bulletin (Published Every Month)	
Single Copy	3·00
Annual Subscription	25·00
Annual Reports (from 1948-49 Onwards)	2·00 to 3·00 each

Handbook of ISI Publications, 1969 (Pages vi + 546, Price Rs 10·00)
Incorporating annotations on all Indian Standards, and also listing ISO Recommendations and Publications of IEC

Available from

INDIAN STANDARDS INSTITUTION

Headquarters

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 1

Telephones 27 36 11-20
27 50 31-40
Telegrams Manaksanstha

Branch Offices

	Telegrams		
534 Sardar Vallabhbhai Patel Road	Manaksanstha Bombay 7	Telephone	35 69 44
5 Chowringhee Approach	Calcutta 13	,,	23-18 23
5-9-201/2 Chirag Ali Lane	Hyderabad 1	,,	3 23 35
117/418 B Sarvodaya Nagar	Kanpur 5	,,	6 76 95
54 General Patters Road	Madras 2	,,	8 72 78

Printed at Delhi Printers, Delhi 6, India